



EuroSun2012
ISES-EUROPE SOLAR CONFERENCE

Solar Energy for a Brighter Future

CONFERENCE
PROGRAMME

RIJEKA, CROATIA
18-20 September 2012

ORGANISED BY:



Croatian Solar Energy Association, Rijeka



Faculty of Engineering, University of Rijeka



International Solar Energy Society

ISES-Europe

UNDER THE PATRONAGE OF:



UNESCO - National Commission Croatia

CO-SPONSORED BY:



International Institute of Refrigeration

IN COOPERATION WITH:

- Ministry of Science, Education and Sports, Croatia
- Environmental Protection and Energy Efficiency Fund
- Energy Institute Hrvoje Požar
- Regional Energy Agency - REA Kvarner
- The Foundation of the University of Rijeka
- Rijeka Tourist Board
- City of Rijeka
- Primorje-Gorski Kotar County
- Institute Ruder Bošković
- Croatian Chamber of Mechanical Engineers
- Rijeka Fair

CONFERENCE OFFICE:

Croatian Solar Energy Association - EuroSun2012:

Address: Vukovarska 58
HR-51000 Rijeka, Croatia
Phone: +385 51 651 508
Fax: +385 51 675 801
E-mail: info@eurosun2012.org
Web site: www.eurosun2012.org

Contact persons:

Paolo Blecich: pblecich@riteh.hr
Marko Perčić: mpercic@riteh.hr
Maja Milić: maja.milic712@gmail.com

EuroSun2012

Solar Energy for a Brighter Future

EuroSun2012 is the ninth Conference of the International Solar Energy Society (ISES-Europe). The Croatian Solar Energy Association and the Faculty of Engineering of the University of Rijeka have the honor of hosting EuroSun2012.

EuroSun2012 is being held under the motto "Solar Energy for a Brighter Future" and the hosts wish you a lot of sun during your stay, which happens to be the case at this time of the year in Opatija.

The technical sessions of the conference will be held in the congress centers of the Grand Hotel Adriatic (GHA) and the Hotel Admiral (HA) in Opatija, while the accompanying Trade exhibition and the students' master course on solar energy will take place in Opatija and Rijeka.

Following the tradition of the past ISES-Europe conferences, EuroSun2012 will last for three days. On the first day (Tuesday, September 18) the EuroSun2012 opening ceremony will start at 9:30 in the Congress Hall of the Grand Hotel Adriatic in Opatija. At 13:00 the Trade exhibition will be opened at Rijeka's harbourfront. At 15:00 the participants will be welcomed in the Governor's Palace in Rijeka. At 17:00 a sightseeing tour has been organized which will bring participants to the most famous industrial and cultural heritage sites in Rijeka.

During the second and the third day (Wednesday and Thursday) of the conference, the technical sessions will take place in Opatija. These sessions include plenary talks, oral presentations and poster presentations. After the plenary talks, which are to be held at the beginning of each morning and afternoon, follow three parallel sessions covering different topics. Two of these sessions will take place in the Grand Hotel Adriatic (GHA) and the third will be held in the Hotel Admiral (HA).

The students' master course on solar energy will be held at the Faculty of Engineering in Rijeka, except on Wednesday and Thursday when students will attend the conference in Opatija.

For any questions or information, participants may refer to the principal conference reception counter in the Grand Hotel Adriatic or at the reception desk in the Hotel Admiral in Opatija or at the Trade exhibition center in Rijeka.

During and after the conference, meetings, visits and tours will take place, and for details the participants are invited to consult the receptionists.

Using the conference badge as transit card, free public transportation is available for participants to travel between Rijeka and Opatija (Bus line 32) every day from 6:00 to 24:00. Also free of charge, a touristic double-decker bus will shuttle between the Grand Hotel Adriatic in Opatija and the Trade exhibition in Rijeka according to a special timetable.

The hosts wish the participants a pleasant sojourn in the beautiful Rijeka and Opatija while enriching their scientific and technical knowledge at EuroSun2012.

Prof Bernard Franković
ISES-Europe President
Chair of the Organising Committee

ORGANISING COMMITTEE:

Chair:

Bernard Franković, HR

Co-chair:

Torben Esbensen, DK

Members:

Jennifer McIntosh, ISES HQ

Elimar Frank, CH

Paolo Blecich, HR

Stjepan Car, HR

Rut Carek, UNESCO-HR

Didier Coulomb, FR

Luka Čarapović, HR

Tonko Ćurko, HR

Jan-Olof Dalenbäck, SE

Neven Duić, HR

Sanjin Fućak, HR

Goran Granić, HR

Zlatko Ivaniš, HR

Darko Jardaš, HR

Roberto Jodice, IT

Ivan Juraga, HR

Serđo Klapčić, HR

Zlatko Komadina, HR

Vitomir Komen, HR

Jurij Kropc, SI

Kristian Lenić, HR

Pero Lučin, HR

André Manificat, FR

Vladimir Medica, HR

Petar Novak, SI

Vojko Obersnel, HR

Branimir Pavković, HR

Damir Pečornik, DE

Marko Perčić, HR

Nedjeljko Perić, HR

Zmagoslav Prelec, HR

Danica Ramljak, HR

Nikola Ružinski, HR

Goran Slipac, HR

Mladen Štajduhar, HR

Krešimir Štih, HR

Anica Trp, HR

Goran Turkalj, HR

Božo Udovičić, HR

Ivan Viličić, HR

Mirko Zelić, HR

INTERNATIONAL COMMITTEE:

Chair:

Dorota Chwieduk, PL (Chair)

Members:

Necdet Altuntop, TR

Lex Bosselaar, NL

Jan-Olof Dalenbäck, SE

Nuno Ribeiro da Silva, PT

Bernard Franković, HR

Anne Grete Hestnes, NO

Dieter Holm, ISES HQ

Gerard Hug, FR

Aldo Iacomelli, IT

Petri Konttinen, FI

Ales Krainer, SI

Tomas Matuska, SK

Jennifer McIntosh, ISES-HQ

Bernard McNelis, UK

Edita Milutiene, LT

Anna Dobrinova Penkin, BG

Torben Esbensen, DK

Laurentia Fara, RO

Istvan Farkas, HU

Elimar Frank, CH

Brian Norton, IE

Colin Porteous, UK

Despina Serghides, CY

Peteris Shipkovs, LV

Vasilis Siskos, GR

Dmitry Strebkov, RU

Wolfgang Streicher, AT

Teolan Tomson, EE

Klaus Vajen, DE

Viktor Vasylyev, UA

Manuel Vázquez Vázquez, ES

SCIENTIFIC - TECHNICAL COMMITTEE:

Chair:

Jan-Olof Dalenbäck, SE (Chair)

Co-chairs:

Branko Bošnjaković, CH (Co-chair)

Uroš Desnica, HR (Co-chair)

Topic chairs:

Elimar Frank, CH

Daniel Mugnier, FR

Ljubomir Mišćević, HR

Istvan Farkas, HU

Jan-Olof Dalenbäck, SE

Branko Bošnjaković, CH

Reviewers:

Elsa Andersen, DK

Chris Bales, SE

Riccardo Battisti, IT

Jacques Bony, CH

Branko Bošnjaković, CH

François Boudehenn, FR

Christoph Brunner, AT

Christian Budig, DE

Jan-Olof Dalenbäck, SE

Uroš Desnica, HR

Neven Duić, HR

Marika Edoff, SE

Torben Esbensen, DK

Istvan Farkas, HU

Christian Fink, AT

Stephan Fischer, DE

Elimar Frank, CH

Bernard Franković, HR

Simon Furbo, DK

Antun Galović, HR

Robert Haberl, CH

Boris Halasz, HR

Robert Hausner, AT

Andreas Heinz, AT

Klaus Hennecke, DE

Hans-Martin Henning, DE

Anne Grete Hestnes, NO

Uli Jakob, DE

Ulrike Jordan, DE

Michal Kabrhel, CZ

Björn Karlsson

Paul Kohlenbach, DE

Peter Kovacs, SE

Christoph Lauterbach, DE

Kristian Lenić, HR

Enric Matteu, ES

Tomas Matuska, CZ

Daniel Mugnier, FR

Bettina Muster, AT

Ljubomir Mišćević, HR

Peter Novak, SI

Kim Tiow Ooi, SG

Thomas Pauschinger, DE

Branimir Pavković, HR

Bengt Perers, DK

Tomas Persson, SE

Erik Pihl, SE

Werner Platzer, DE

Esther Rojas, ES

Manuel Romero, ES

Dani Rusirawan, ID

Karin Rühling, DE

Moritz Schubert, AT

Christian Schweigler, DE

Reza Tim Selke, AT

Despina Sergides, CY

Per Shahbazfar, DE

Laura Siso Miro, ES

Alex Sørensen, DK

Wolfgang Streicher, AT

Rainer Tepe, DE

Bernard Thonon, FR

Alexander Thür, AT

Cristoph Trinkl, DE

Anica Trp, HR

Klaus Vajen, DE

Wim Van Gelden, NL

Johan Vestlund, SE

Piroska Vig, HU

Ivan Viličić, HR

Maria Wall, SE

Stephen White, AU

MONDAY, September 17, 2012

17.00 - 20.00 REGISTRATION / INFO DESK
Grand Hotel Adriatic (GHA) Opatija

20.00 - 21.00 WELCOME COCKTAIL (GHA)

TUESDAY, September 18, 2012

9.00 - 10.00 REGISTRATION / INFO DESK (9.00 - 12.30)

9.30 - 12.00 **EUROSUN2012 OPENING CEREMONY** (Congress Hall GHA)
Chair: B. Franković (HR), J. McIntosh (DE), J. O. Dalenbäck (SE), T. Esbensen (DK)

B. Franković (HR), ISES-Europe President, Chair of EuroSun2012 Organising Committee
P. Lučin (HR), Rector of the University of Rijeka
G. Turkalj (HR), Dean of the Faculty of Engineering Rijeka
T. Esbensen (DK), ISES-Europe Secretary, Co-Chair of EuroSun2012 Organising Committee
T. Čurko (HR), Representative of the International Institute of Refrigeration (IIR)
Y. Valle-Neff (FR), Director of the UNESCO Regional Bureau for Science and Culture in Europe, Venice - Italy
J. McIntosh (DE), ISES-Headquarters
I. Županić (HR), Director of the Croatian Energy Market Operator (HROTE)
Delegat of local and state authorities

12.00 - 13.00 Transfer to Rijeka

13.00 - 14.30 **OPENING OF THE EUROSUN2012 TRADE EXHIBITION** (Rijeka's Harbour)

14.30 - 16.00 RECEPTION IN THE GOVERNOR'S PALACE (Rijeka) / LUNCH

16.00 - 19.00 SIGHTSEEING TOUR - RIJEKA'S CULTURAL AND INDUSTRIAL HERITAGE

REGISTRATION / INFO DESK (8.00 - 19.00)

PLENARY SESSION I (Congress Hall GHA)*

Chair: T. Esbensen (DK), V. Medica (HR)

9.00 - 9.30	J. O. Dalenback (SE)	Facts and myths about the potential use of solar heat and electricity
9.30 - 10.00	B. Franković (HR)	Renewable energy - Challenges and opportunities in the Adriatic region
10.00 - 10.30	R. Vigotti (IT)	Critical review of the Mediterranean Renewable Initiatives - lesson learned and the way forward

10.30 - 11.00 COFFEE BREAK

1. SOLAR HEATING SYSTEMS - ORAL (Camelia GHA)

Chair: U. Jordan (DE), L. Beltran (US)

11.00 - 11.15	S. Furbo, E. Andersen, J. Fan, Z. Chen, B. Perers (DK)	Thermal performance of marketed SDHW systems under laboratory conditions
11.15 - 11.30	M. Bunea, S. Eicher, C. Hildbrand, J. Bony, B. Perers, S. Citherlet (CH)	Performance of solar collectors under low temperature conditions: measurements and simulations results
11.30 - 11.45	A. Loose, S. Bonk, H. Drück (DE)	Investigation of combined solar thermal and heat pump systems - field and laboratory tests
11.45 - 12.00	P. Pärirsch, J. Warmuth, E. Bertram, R. Tepe (DE)	Experiments for combined solar and heat pump systems
12.00 - 12.15	A. Dröscher, A. Heinz (AT)	Prolonging the running time of a large scale solar thermal system by employing a heat pump
12.15 - 12.30	J. Ruschenburg, S. Herkel (DE)	A comparative analysis of market available solar thermal heat pump systems
12.30 - 12.45	B. Perers, E. Andersen, S. Furbo, Z. Chen, A. Tsouvalas (DK)	Measurement and modelling of a multifunctional solar plus heat pump system from Nilan. Experiences from one year of test operation

1. SOLAR HEATING SYSTEMS - POSTER (Posters GHA)

Chair: U. Jordan (DE), L. Beltran (US)

12.45 - 13.00	A. Moia Pol, V. Martinez Moll, M. A. Barcelo, R. P. Nadal (ES)	Solar and heat pump systems. An analysis of several combinations in Mediterranean areas
	E. Bertram, P. Pärirsch, R. Tepe (DE)	Impact of solar heat pump system concepts on seasonal performance - simulation studies
	S. Hennaut, S. Thomas, E. Davin, A. Skrylnyk, M. Frère, P. André (BE)	Dynamic simulations of solar combisystems integrating a seasonal sorption storage: influence of the combisystems configuration
	O. Kusy, K. Vajen (DE)	Simulation-based estimation of the optimization potential of dynamic controller settings for solar thermal combisystems
	M. Pichler, W. Lerch, A. Heinz, R. Heimrath, H. Schranzhofer (AT)	Auxiliary energy saving potential of solar thermal systems with predictive controls
	M. Vujošević (RS)	Example of cost effectiveness of individual solar collector installation and its contribution to environmental protection

3. SOLAR ENERGY IN BUILDINGS - ORAL (Congress Hall GHA)

Chair: A. G. Hestnes (NO), Lj. Mišćević (HR)

11.00 - 11.15	O. V. Shepovalova, I. V. Dunichkin (RU)	Solar architecture of the resort-and-health-improving complexes
11.15 - 11.30	P. Vejsig Pedersen (DK)	Active house renovation in Albertslund
11.30 - 11.45	D. Shearer, C. D.A. Porteous (UK)	Winter performance of 2-storey solar buffer spaces in Glasgow demonstration houses
11.45 - 12.00	F. Goia, M. Haase, M. Perino (IT)	Optimal transparent percentage in façade modules for office buildings in different European climates
12.00 - 12.15	L. Mišćević (HR)	Solar city Zaprešić urban project generated by Croatian solar house (CSH-CERES)

3. SOLAR ENERGY IN BUILDINGS - POSTER (Posters GHA)

Chair: A. G. Hestnes (NO), Lj. Mišćević (HR)

12.00 - 12.30	A. M. Omer (UK)	Solar energy for buildings: clean energies utilisation and development
	A. M. Smaranda Florescu, G. Bandoc, M. Degeratu (RO)	Interdependence between the characteristic of solar regime and energy converted to provide needs for operation of buildings
	B. Karamata, M. Andersen (CH)	Limits and artefacts of imaging goniophotometers for complex solar façade systems
	R. Damle, O. Lehmkuhl, I. Rodríguez, A. Oliva (ES)	Coupling CFD models of airflow with building simulation with an object-oriented and parallel infrastructure
	M. Kocifaj (SK)	Diffuse radiances under partially cloudy sky - theory and numerical modelling
	J. Klačka, M. Kocifaj, Z. Tomková (SK)	Cellular statistical models of broken clouds for radiation modelling
	S. Darula, R. Kittler, L. Kómar (SK)	Vertical sky illuminance respecting ISO sky standards
	M. Fsadni (MT)	Building design for near zero energy buildings in Malta
	M. C. Katafygiotou, D. Serghides (CY)	The prospects for energy efficiency for an old school building on the mountainous area of Cyprus
	Sagyndyk Turusbekov, Alaibek Obozov	Developing the renewable energy sector of the Kyrgyz Republic with scientific and practical assimilation of the achievements in the EU countries

4. SOLAR ENERGY SYSTEM COMPONENTS - ORAL (Congress Hall HA)

Chair: D. Chwieduk (PL), D. Jardas (HR)

11.00 - 11.15	C. Wilhelms, K. Zass, R. Heinzen, K. Vajen (DE)	The combination of vacuum and polyurethane panels as advanced insulation concept for seasonal heat storage
11.15 - 11.30	D. Philippen, M. Y. Haller, W. Logie, M. Thalmann, S. Brunold, E. Frank (CH)	Development of a heat exchanger that can be de-iced for use in ice stores in solar thermal heat pump systems
11.30 - 11.45	L. Mongibello, M. Atrigna, C. Cancro, G. Graditi, C. Privato (IT)	Numerical investigation of a high temperature packed bed heat storage system
11.45 - 12.00	F. Marias, G. Tanguy, J. Wyttenbach, S. Rouge, P. Papillon (FR)	Experimental results of thermochemical storage pilot reactor with moist air
12.00 - 12.15	M. Mussard, E. Vaujany, O. J. Nydal (NO)	Heating of an oil-based heat storage with a low-cost small-scale solar parabolic trough

4. SOLAR ENERGY SYSTEM COMPONENTS - POSTER (Posters HA)

Chair: D. Chwieduk (PL), D. Jardas (HR)

	J. Steinweg, T. Ramin, G. Rockendorf (DE)	Investigations on storage tank losses caused by tube internal recirculation
12.15 - 12.45	C.D. Pérez-Segarra, I. Rodríguez, A. Oliva, S. Torras, O. Lehmkuhl (ES)	Detailed numerical model for the resolution of molten salt storage tanks for CSP plants
	B. Hirschmann, G. Oreski, K. Resch, G. Pinter (AT)	Optical and mechanical characterization of fluoropolymer films for pneumatic pre-stressed sun concentrators
	H. Kessentini, R. Capdevila, J. Castro, A. Oliva (ES)	Three dimensional numerical simulation of combined conduction and radiation in transparent insulation material
	I. Fekete, I Farkas (HU)	Components of building integrated solar collectors
	N. Arcuri, F. Reda, M. De Simone (IT)	Energy and thermo-fluid-dynamics evaluations of photovoltaic panels cooled by water and air
	M. Dudita, G. Bacanu, A. Duta, I. Visa (RO)	New hot plate based on the heat pipe principle for solar selective coatings deposition

13.00 - 14.30 LUNCH (GHA)

PLENARY SESSION II (Congress Hall GHA)

Chair: J.-O. Dalenbäck (SE), R. Vigotti (IT)

14.30 - 15.00	F. Barbir (HR)	Hydrogen energy technologies and their role in future energy system based on renewable energy sources
15.00 - 15.30	M. Rommel (DE)	Development of PVT collectors: What are the technical challenges and what has been achieved
15.30 - 16.00	I. Farkas (HU)	Integrated solar energy/technology systems

16.00 - 16.30 COFFEE BREAK

1. SOLAR HEATING SYSTEMS - ORAL (Congress Hall GHA)

Chair: R. Hastings (CH), I. Wolf (HR)

16.30 - 16.45	P. A. Sørensen, M. V. Jensen, N. From (DK)	Smart district heating using the Sunstore concept
16.45 - 17.00	F. Ulbjerg, S. Skov-Thoader, B. Mehder (DK)	Developing and maturing large scale solar thermal heating plants
17.00 - 17.15	R. Brock, R. Fedrizzi, D. Pietruschka, F. Orioli, R. Soell, R. Stauss (IT)	Installation and demonstration of three large solar thermal collectors fields supplying industrial processes heat
17.15 - 17.30	B. Schmitt, C. Lauterbach, M. Dittmar, K. Vajen (DE)	Guideline for the utilization of solar heat in breweries
17.30 - 17.45	E. Cortes Rodriguez, F. de Jesus Ojeda Camara, C. Ruiz Mercado, I. Pilatowsky Figueroa (MX)	Redesign of a drying system with solar energy in the Yucatan peninsula, Mexico
17.45 - 18.00	R. Shahbazfar, C. De Keizer, S. Kuethe, U. Jordan, K. Vajen (DE)	Fault detection and fault diagnosis for large scale solar thermal systems
18.00 - 18.15	P. Birley, C. Garnier, J. Currie, T. Muneer (UK)	CFD study of an integrated collector storage domestic solar hot water system
18.15 - 18.30	P. Blecich, I. Orlić (HR)	Roof integrated solar concrete collectors for domestic hot water heating in protected buildings
18.30 - 18.45	M.A. Lozano, M. De Guadalfajara, L.M. Serra (ES)	A simple model for performance evaluation of district solar heating plants in Spain

1. SOLAR HEATING SYSTEMS - POSTER (Posters GHA)

Chair: R. Hastings (CH), I. Wolf (HR)

18.45 - 19.00	J. Mondol, M. Smyth, A. Zacharopoulos, D. Paul (IE)	Comparative performance analysis of solar heat exchangers for solar hot water systems
	T. Čutić, J. Pasanec, J. Baleta, V. Soldo, T. Čurko (HR)	Mobile solar assisted heat pump with direct expansion
	M. Korić (BA)	Annual thermal performance evaluation of low temperature solar systems in the region of former SFRY
	J. Vera, I. Lillo, J. Olmo Fernández, F. Sallaberry (ES)	Influence analysis of the characteristic coefficients of solar domestic water systems tested according to the standard ISO 9459-2 regarding its long term prediction
	C. Marvillet, F. Liaudet, P. Esparcieux, O. Baup (FR)	An innovative system for the production of domestic hot water with high efficient solar hybrid collectors
	P. Shipkovs, M. Vanags, A. Snegirjovs, L. Migla, G. Kashkarova, K. Lebedeva, J. Shipkovs (LV)	Optimization of solar thermal system's pipelines insulation
	Z. Chen, S. Furbo, J. Fan, E. Andersen, B. Perers (DK)	A drain back solar combi system with evacuated tubular solar collectors and fabric stratifiers

3. SOLAR ENERGY IN BUILDINGS - ORAL (Camelia GHA)

Chair: O. B. Jørgensen (DK), S. Medved (SI)

16.30 - 16.45	D. A. Chwieduk (PL)	Energy concept of a building in high latitude countries with regard to incident solar energy
16.45 - 17.00	T. Selke, F. Stift, A. Lehmden (AT)	Plus energy building concepts for dwellings based on high solar fraction and solar heat activated bricks
17.00 - 17.15	L. O. Beltran (US)	Creating healthy energy efficient luminous indoor environments
17.15 - 17.30	M. Šturm, M. Mazej, S. Muhič, P. Novak (SI)	Analysis of low energy and exergy building

17.30 - 17.45	R. Thygesen, B. Karlsson (SE)	Simulation of an energy system with a ground source heat pump and solar cells for a high solar energy fraction in a near zero energy building in Sweden
17.45 - 18.00	M. Udagawa, H. Roh, T. Kusunoki (JP)	Study on renovation to solar houses with air collector Part 1 House T - renovation to the net zero energy house
18.00 - 18.15	H. Roh, M. Udagawa, T. Kusunoki (JP)	Study on renovation to solar houses with air collector Part 2 House N - renovation of the typical two-storied house
18.15 - 18.30	R. Botpaev, J. Orozaliev, K. Vajen (DE)	Economically optimal level of thermal insulation for single-family houses in Kyrgyzstan
18.30 - 18.45	T. Esbensen, R. Bindels (DK)	New and Innovative active and passive solar energy buildings in Denmark

3. SOLAR ENERGY IN BUILDINGS - POSTER (Posters GHA)

Chair: O. B. Jørgensen (DK), S. Medved (SI)

18.45 - 19.00	G. Pérez, J. Coma, C. Solé, L.F. Cabeza (ES)	Experimental evaluation of the "ecological roof" in Mediterranean continental climate
	A. de Gracia, L. Navarro, A. Castell, A. Ruiz-Pardo, S. Álvarez, L. F. Cabeza (ES)	Experimental study on the thermal performance of a ventilated facade with PCM in its air cavity
	J. Glembin, J. Steinweg, G. Rockendorf, C. Schmelzer, N. Rudolph, M. Oppermann (DE)	Development of a concept for the temperature-optimized heat production in solar active houses
	A. Sánchez, J. Salom, E. Cubí (ES)	Towards net zero energy office buildings in Spain: a review of 12 case studies
	N. Arcuri, M. De Simone, F. Reda, P. Bevilacqua, G. Pizzuti (IT)	Energy analysis for the realization of a green roof on an university building
	U. I. Dar, I. Sartori, L. Georges, V. Novaković (NO)	Evaluation of load matching and grid interaction index of a Norwegian all-electric net ZEB under stochastic user loads
	L. Rincón, S. Serrano, L. Navarro, A. Castell, L. F. Cabeza (ES)	Experimental thermal behaviour of an innovative insulation material under real operating conditions
	J. Klačka, Z. Tomková, M. Kocifaj, L. Kómar (SK)	Angular distribution of scattered radiation under broken cloud arrays-method of rapid calculation

5. SOLAR ELECTRICITY - ORAL (Congress Hall HA)

Chair: S. Blume (AU), I. Farkas (HU)

16.30 - 16.45	P. Cottam, P. Duffour, P. Fromme (UK)	A parametric study of solar thermal chimney performance
16.45 - 17.00	J. Klimek, M. Sauerborn, B. Hoffschmidt, S. Sieger, G. Biegel, H. Essen, J. Götttsche, P. Hilger (DE)	Radar technology for heliostat position control
17.00 - 17.15	S. Alexopoulos, C. Rau, B. Hoffschmidt, M. Latzke (DE)	Modelling and validation of a transient heat recovery steam generator of the solar tower power plant Juelich
17.15 - 17.30	B. Coelho, A. Oliveira, A. Mendes (PT)	Influence of storage capacity, solar multiple and control strategy in the performance of atmospheric volumetric receivers power plants
17.30 - 17.45	C. Oiknine, Z. Schwartzmann, F. Navallon (IL)	New cylindrical photovoltaic system at X10 sun concentration with one axis tracking and self cleaning
17.45 - 18.00	R. Platon, S. Pelland, Y. Poissant (CA)	Modelling the power production of a photovoltaic system: comparison of sugeno-type fuzzy logic and PVSAT-2 models
18.00 - 18.15	T. Yano, N. Itoh, Y. Takahashi, M. Niino, K. Kisara (JP)	Desalination and disaster prevention system utilizing solar thermal energy and thermoelectric module
18.15 - 18.30	J. Vetršek, S. Medved	Prediction of photovoltaic system production using weather forecasts
18.30 - 18.45	T. Matsumoto, A. Horibata, T. Itoh, T. Watanabe (JP)	Construction of production system with see-through solar cells to promote growth of a plant by supplemental led light
18.45 - 19.00	F. Barbir, D. Bezmalinović, A. Vukman (HR)	Optimization of fuel cell role in autonomous photovoltaic systems

5. SOLAR ELECTRICITY - POSTER (Posters HA)

Chair: S. Blume (AU), I. Farkas (HU)

18.30 - 18.45	A. A. Hachicha, I. Rodríguez, A. Oliva (ES)	Large-eddy simulations of fluid flow and heat transfer around a parabolic trough solar collector
18.30 - 18.45	Y. D. Arbuzov, V. M. Evdokimov, O. V. Shepvalova (RU)	Top limit characteristics of new type cascade PC on the basis of homogeneous semiconductor
	D. Rusirawan, I. Farkas (HU)	Electrical and exergetic efficiencies of polycrystalline and amorphous silicon
	I. Farkas, I. Kocsany, I. Seres (HU)	Exergy based performance analysis of hybrid solar collector
	S. Tundee, N. Srihajong, S. Charmongkolpradit (TH)	The comparison of the heat extraction from non convective zone and lower convective zone of the solar ponds

20.00

CONFERENCE DINNER

REGISTRATION / INFO DESK (8.00 - 19.00)

PLENARY SESSION III (Congress Hall GHA)

Chair: M. Wall (SE), P. Middleton (UK)

9.00 - 9.30	E. Frank (CH)	Solar heat for industrial processes
9.30 - 10.00	P. A. Soerensen (DK)	Smart district heating using the SUNSTORE concept

SPONSORS' PRESENTATION (Congress Hall GHA)

10.00 - 10.15	D. Jardas (HR)	Renewable energy sources in the County of Primorje and Gorski Kotar
10.15 - 10.30		Končar
10.30 - 10.45		Weishaupt
10.45 - 11.00		Viessmann

11.00 - 11.30 COFFEE BREAK

2. SOLAR COOLING SYSTEMS - ORAL (Congress Hall GHA)

Chair: D. Mugnier (FR), H.-M. Henning (DE), V. Soldo (HR)

11.30 - 11.45	H. Demasles, F. Boudehenn, D. Chèze, X. Jobard, P. Papillon, J. Wyttenbach (FR)	Development of a 5 kW cooling capacity ammonia-water absorption chiller for solar cooling applications
11.45 - 12.00	D. Rowe, S. White, M. Goldsworthy, M. Peristy, M. Fisher, P. Moro, P. Scanlon, K. Anderson, D. Kirby (AU)	A two rotor inter-cooled solar desiccant cooling demonstration

12.00 - 12.15	E. Wiemken, A. R.P. Elias, B. Nienborg, P. Zachmeier, M. Safarik, F. Schmidt, C. Glück (DE)	EVASOLK - evaluation of solar cooling in comparison to reference technologies
12.15 - 12.30	C. Weber, F. Mehling, A. Heinrich, T. Nunez, M. Berger (DE)	Solar cooling with water-ammonia absorption chillers and concentrating solar collector - operational experience
12.30 - 12.45	P. Schwerdt, C. Pollerberg, R. Krajewski, C. Schuster (DE)	Membrane pervaporation for advanced absorber and desorber design in compact lithium bromide- water absorption chillers
12.45 - 13.00	M. Jaradat, M. Mützel, J. Smogor, L. Schiemann, U. Jordan, K. Vajen (DE)	Solar-driven liquid-desiccant dehumidifier/ regenerator for drying agricultural products
13.00 - 13.15	C. M. C. Ribeiro, A. M. Rodrigues, D. B. Riffel, B. dos Santos, B. Zeghmati, A. P. F. Leite (BR)	Analysis of a thermal storage system as part of a 20 kW solar adsorption air conditioning

2. SOLAR COOLING SYSTEMS - POSTER (Posters GHA)

Chair: D. Mugnier (FR), H.-M. Henning (DE), V. Soldo (HR)

13.15 - 13.30	P. Gantenbein, L. Leppin, H. Marty, E. Frank (CH)	Development and validation of solar cooling and free cooling simulation models
	T. Ito, H. Sato, A. Matsuo (JP)	Numerical analysis for ejector configuration design
	E. C. Rodriguez, R. R. Perez, C. R. Mercado, W. R. Gomez- Franco (MX)	Design of prototype of a solar absorption air conditioner in the Yucatan peninsula, Mexico
	S. Varga, P. M. S. Lebre, A. C. Oliveira (PT)	Working fluid selection for a solar driven ejector cooling system operating under variable conditions
	D. Butrymowicz, K. Smierciew, J. Karwacki (PL)	Investigation of internal heat transfer in ejector- based solar air conditioner
	D. Ciobanu, C. Jaliu, I. Visa (RO)	Solar thermal system with dish collector used for cooling

3. SOLAR ENERGY IN BUILDINGS - ORAL (Camelia GHA)

Chair: A. Trp (HR), M. Šturm (SI)

11.30 - 11.45	S. Fara, L. Fara, A. Moraru-Galbeaza, D. Finta (RO)	BIPV systems in Romania - present and future trends
11.45 - 12.00	P. De Berardinis, P. Bonomo (IT)	BIPV in the recovery of the historical heritage. Guidelines for the post-earthquake reconstruction
12.00 - 12.15	F. Frontini, M. Ferrazzo, I. Zanetti (CH)	Sustainable renovation of historical buildings: concepts for solar integration
12.15 - 12.30	C. S. Polo Lopez, L. Tenconi, F. Lo Castro, S. Brambilasca, F. J. Neila Gonzalez, E. Caamaño Martin, F. Frontini (IT)	Comfort performance studies on façade-integrated BIPV
12.30 - 12.45	K. Farkas (NO)	Facade integration typologies of photovoltaics
12.45 - 13.00	A. Dalibard, U. Eicker (DE)	Uncovered PVT collectors for night radiative cooling of buildings
13.00 - 13.15	C. Arkar, S. Medved (SI)	Building envelope element for decentralized ventilation with solar energy utilization

3. SOLAR ENERGY IN BUILDINGS - POSTER (Posters GHA)

Chair: A. Trp (HR), M. Šturm (SI)

13.15 - 13.30	D. Moser, W. Bresciani, M. Nikolaeva-Dimitrova, L. Maturi (IT)	6 months monitoring of roof integrated modules and performance comparison in different installation types
	K. Farkas (NO)	Formal aspects of product development of photovoltaics - recommendations for manufacturers
	T. Abu Hamed, A. Alshare (IL)	Passive cooling of building integrated photovoltaic: experiment and modelling
	L. Kómar, A. Rusnák (SK)	Spectral standard sky model for photovoltaic applications
	A. Fanchiotti, E. Carnielo, M. Zinzi (IT)	Impact of cool asphalts on urban microclimate

4. SOLAR ENERGY SYSTEM COMPONENTS - ORAL (Congress Hall HA)

Chair: K. Vajen (DE), A. Galović (HR)

11.30 - 11.45	M. Rommel, M. Larcher, E. Frank, A. Bohren, M. Keller, F. Riedesser (CH)	Experimental investigations on the optical and thermal characterization of a parabolic trough collector
11.45 - 12.00	H. Heidar Esfehiani, A. W. Badar, F. Ziegler (DE)	Numerical modelling and thermal performance comparison of direct flow vacuum tube solar collectors for coaxial, U and straight flow configurations
12.00 - 12.15	H. Kessentini, R. Capdevila, O. Lehmkuhl, J. Castro, A. Oliva (ES)	Numerical simulation of heat transfer and fluid flow in a flat plate solar collector with TIM and ventilation channel
12.15 - 12.30	W. S. Duff, J. Daosukho (US)	Experimental validation and model verification for a novel geometry ICPC solar collector
12.30 - 12.45	L. Koch, M. Hermann, M. Bauch (DE)	Investigation of new integrated solar thermal absorbers by means of a 2-D model

4. SOLAR ENERGY SYSTEM COMPONENTS - POSTER (Posters HA)

Chair: K. Vajen (DE), A. Galović (HR)

12.45 - 13.00	S. Jack, N. Katenbrink, J. Parzefall, G. Rockendorf (DE)	Heat transfer characteristics of manifolds in solar thermal collectors with heat pipes
	S. Föste, F. Giovannetti (DE)	Thermal insulation for high efficiency flat plate collectors
	F. M. F. Siala, M. E. Elayeb (LY)	Calculation of the shading factor in heliostat fields
	F. Alberti, M. Cozzini, L. Crema, R. Bartali (IT)	Coating candidates comparison and a two-zone coating strategy for parabolic trough
	Q. Lin, A. Manificat, L. Tadriss, D. Chèze (FR)	A new concentrating solar technology without tracking sun's path
	K. Štih, E. Vlačić, D. Linarić (HR)	SOLEGLASS - new solution for today's high end solar thermal heat

13.30 - 15.00 LUNCH

PLENARY SESSION IV (Congress Hall GHA)

Chair: E. Frank (CH), B. Bošnjaković (HR)

15.00 - 15.30	B. Bošnjaković (CH)	Geopolitics of solar power
15.30 - 16.00	P. Pereira da Silva (PT)	Social dimensions of solar energy: challenges and opportunities
16.00 - 16.30	D. Mugnier (FR)	Solar thermal energy for cooling and refrigeration: status and perspectives

16.30 - 17.00 COFFEE BREAK

2. SOLAR COOLING SYSTEMS - ORAL (Congress Hall GHA)

Chair: M. White (AU), T. Čurko (HR)

17.00 - 17.15	R. Sire, D. Mugnier (FR)	Innovative and energy efficient concept for solar cooling (DHW/cooling hybrid strategy): practical first results
17.15 - 17.30	A. Gil, E. Oró, L. Miró, G. Peiró, A. Ruiz, J. M. Salmerón, L. F. Cabeza (ES)	Experimental analysis of hydroquinone used as phase change material (PCM) to be applied in solar cooling refrigeration
17.30 - 17.45	D. Butrymowicz, K. Smierciew, J. Gagan, J. Karwacki, M. Bergander (PL)	Numerical and experimental investigation of solar ejection refrigeration cycle utilizing natural refrigerants
17.45 - 18.00	P. Moreno, C. Solé, A. Castell, L. F. Cabeza (ES)	Heat pump integrated PCM thermal energy storage system
18.00 - 18.15	G. Ferruzzi, M. D'Antoni, R. Fedrizzi, C. Dipasquale (IT)	Experimental validation of the numerical model of a solar heating and cooling system within the FP7 project alone
18.15 - 18.30	M. I. Gonzalez, A. Serna, R. Martinez-Mayo (ES)	A new hybrid heating/cooling device: design and experimental test

2. SOLAR COOLING SYSTEMS - POSTER (Posters GHA)

Chair: M. White (AU), T. Čurko (HR)

18.30 - 18.45	E. C. Rodriguez, D. M. Hernandez, C. A. R. Mercado, C. Lizama (MX)	Optimum solar collector arrangement for a prototype absorption system in Yucatan peninsula, Mexico
	J. Gagan, D. Butrymowicz, K. Smierciew, J. Karwacki (PL)	Flow visualisation using PIV technique in application to ejection solar air-conditioning
	J. López-Villada, I. A. Montero, L. C. Mendoza, D. S. Ayou, J. C. Bruno, A. Coronas (ES)	Modeling, simulation and analysis of solar absorption power-cooling systems

4. SOLAR ENERGY SYSTEM COMPONENTS-ORAL (Congress Hall HA)

Chair: W. Streicher (AT), D. Pečornik (DE)

17.00 - 17.15	D. Carbonell, J. Cadafalch, P. Pärish, R. Consul (ES)	Numerical analysis of heat pump models. Comparative study between equation-fit and refrigerant cycle based models
17.15 - 17.30	C. S. Polo Lopez, L. Tenconi, F. Lo Castro, S. Brambilasca (IT)	Stand test solution for photovoltaic thermal hybrid solar collector devices under real operating conditions
17.30 - 17.45	A. Zacharopoulos, D. I. Paul, J. D. Mondol, M. Smyth (UK)	Optical characterisation of a PV concentrator under simulated and realistic solar conditions using an isolated cell PV module
17.45 - 18.00	T. Matuška, L. Buchta (CZ)	Energy performance analysis of unglazed BIPV/T collectors with a detailed model
18.00 - 18.15	L. A. Tagliafico, F. Scarpa, F. Valsuani, C. Rossi (IT)	Some features of water cooled hybrid panels coupled to solar assisted heat pumps
18.15 - 18.30	L. Chea, H. Hakansson, B. Karlsson (MZ)	Performance evaluation of new two axes tracking PV-thermal concentrator
18.30 - 18.45	S. Klucka, S. Alexopoulos, C. Vaessen, M. Neises, M. Roeb (DE)	Scenario development for efficient methanol production using CO ₂ and solar energy
18.45 - 19.00	M. Šimac, V. Filipan (HR)	Energy characteristic of a photovoltaic module in real conditions and its modeling

6. SOLAR ENERGY FRAMEWORKS - ORAL (Camelia GHA)

Chair: J. McIntosh (DE), P. Pereira da Silva (PT)

17.00 - 17.15	S. Bonk, E. M. Serrats, H. Drück, A. G. de Jalón Aramayo (ES)	Implementation of the requirements for solar domestic hot water systems resulting from the EU energy labelling directive in test procedures according to EN 12976-2
17.15 - 17.30	E. Pihl, F. Johnsson (SE)	Concentrated solar power hybrids - technologies and European retrofit potential
17.30 - 17.45	L. Runko Luttenberger (HR)	Eliminating the barriers to solar energy use in Croatia
17.45 - 18.00	C. Brandoni, M. Renzi (IT)	Hybrid renewable energy systems made up of high concentration PV-solar technology and micro-CHP devices
18.00 - 18.15	T. Tomson (EE)	Transient processes of solar radiation
18.15 - 18.30	K. Geimer, K. Kramer, M. Rehfeldt (DE)	Mechanical load tests for solar thermal collectors
18.30 - 18.45	H. Winkler, B. Franke, L. Eltrop, T. Telsnig (ZA)	How applicable are standard solar irradiation maps? Insights from case studies
18.45 - 19.00	Y. Eissa, P. R. Marpu, H. Ghedira, T. B. M. J. Ouarda, M. Chiesa (AE)	Near-nowcasting tool for direct normal and global horizontal irradiance estimations using SEVIRI images
19.00 - 19.15	B. Jelavić, A. Bačan, L. Horváth, M. Perović (HR)	Development of RES sector in Croatia with emphasis on solar energy

6. SOLAR ENERGY FRAMEWORKS - POSTER (Posters GHA)

Chair: J. McIntosh (DE), P. Pereira da Silva (PT)

19.15 - 19.30	G. Lješić, G. Dodig (BA)	Economical justification of solar plants in Herzegovina
	L. F. Aguiar (US)	Classification of energy consumption profiles provided by solar systems using neural network
	Y. Eissa, P. R. Marpu, H. Ghedira, M. Chiesa (AE)	SEVIRI-derived direct normal irradiance using heliosat-2 global horizontal irradiance and a neural network ensemble: a comparison

19.00 - 19.15	V. Komen, R. Prenc, N. Bogunović (HR)	Optimal siting of a PV system for loss minimization in MV distribution networks
	P. P. Otte (NO)	The impact of spiritual commitment on the social adoption of institutional solar cooking - The case of the Brahma Kumaris
	B. Bartok, L. Fara, A. Galbeaza Moraru, A. Diaconu (RO)	Estimation of a BIPV system performance based on solar radiation forecast models
	M. Kratzemberg, H.G. Beyer (BR)	Benefits of meteorological forecasts for the operation of DHW systems using electrical auxiliary heaters - discussed for conditions in Brazil
	R. D. Tapakis, A. G. Charalambides (CY)	Monitoring cloud motion in Cyprus for solar irradiance prediction
	L. Skalík, O. Lulkovičová, S. Furbo, B. Perers, J. Dragsted, K. P. Nielsen, M. Scharling, T. Carlund (SK)	Evaluation of long-term global radiation measurements in Denmark and Sweden
	P. Shipkovs, G. Kashkarova, K. Lebedeva, L. Migla, J. Shipkovs (LV)	Possibilities of solar energy use and experience in Latvia
	D. Protić, M. Kilibarda, I. Vučetić, I. Nestorov (RS)	3D roof modelling for accurate assessment of solar potential
	M. Krstinić Nižić, E. Rudan (HR)	Economic possibilities of solar energy use in tourism
	G. A. Parnis, A. B. Sproul (AU)	Building thermal modelling using electric circuit simulation
	A. Bačan, N. Matijašević, T. D. Tsoutsos, S. K. Tournaki, Z. K. Gkouskos, G. Masson (HR)	Training and certification scheme for PV installers

19.30 - 20.30 **EUROSUN2012 CLOSING CEREMONY** (Congress Hall GHA)
 Chair: T. Esbensen (DK) / B. Franković (HR)
 D. Renne, ISES President
 E. Frank, ISES-Europe Vice-President
 B. Franković, ISES-Europe President

POST-CONFERENCE TOURS

9.30 - 20.00

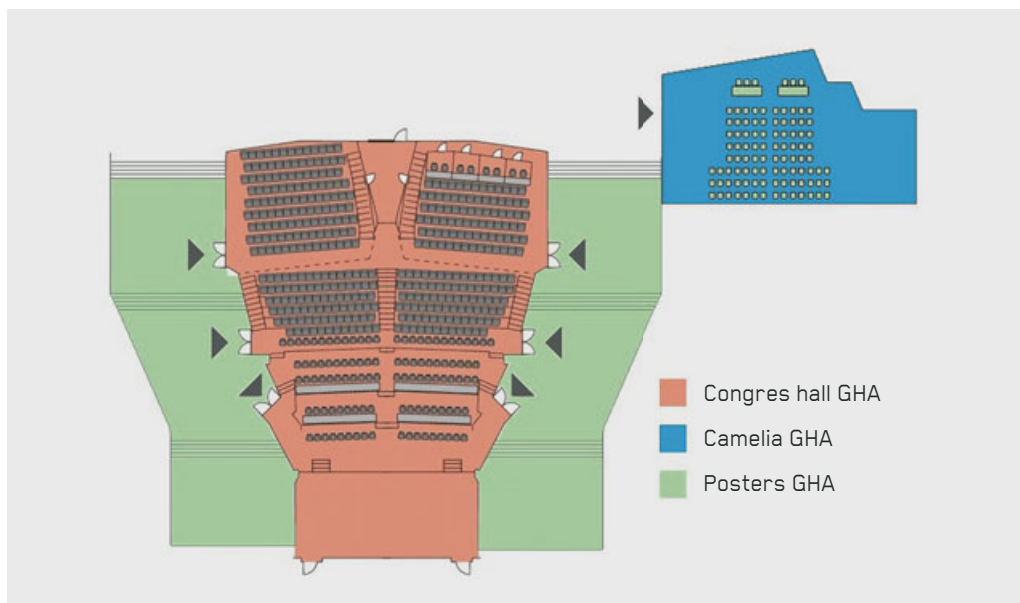
Technical Tours:

Rijeka - Crikvenica - Novi Vinodolski - Senj - Wind power plant "Vrataruša"
Solar power plant on Rijeka's highway - Solar power plant of the
elementary school Čavle - Adria Sol solar power plant - Ponikve - Košljun (Krk)

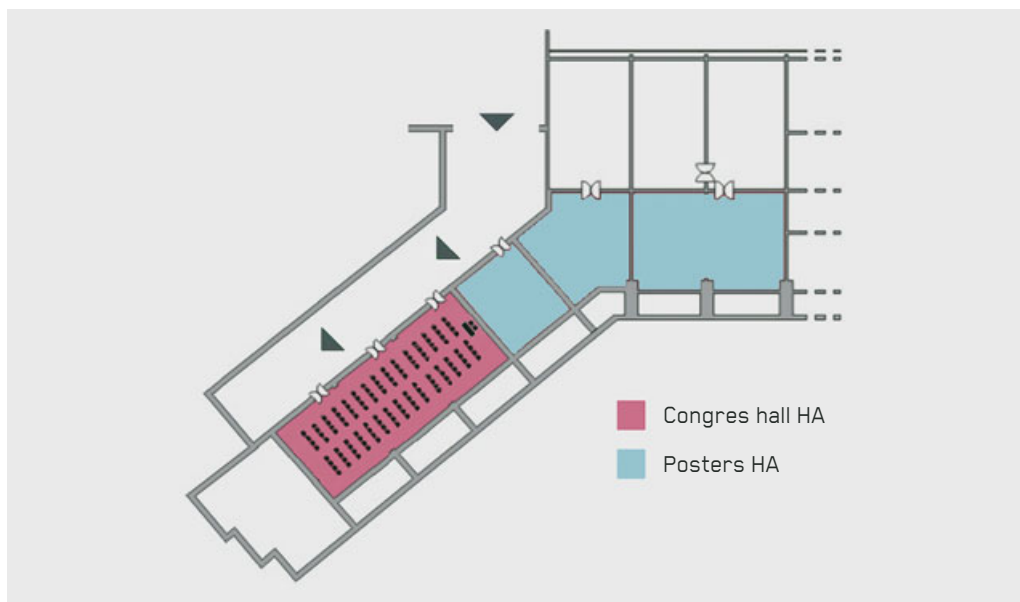
Sightseeing Tours:

Pula - National park Brijuni - Rovinj - Poreč
Lošinj

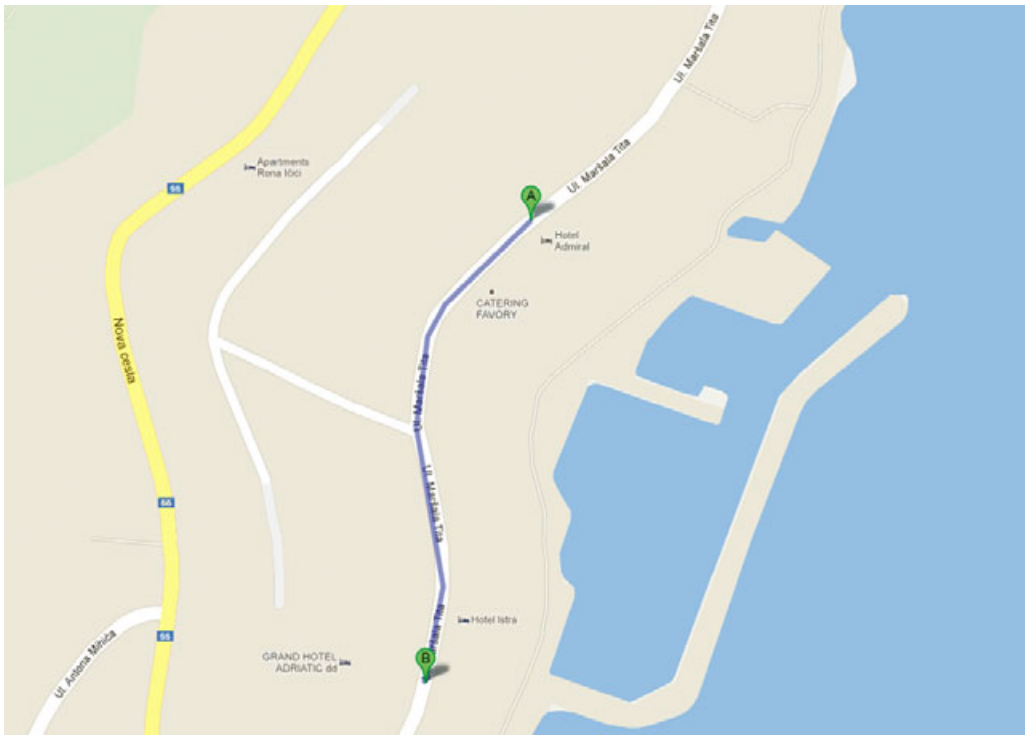
LOCATIONS OF PRESENTATION AND POSTER SESSIONS:



Grand Hotel Adriatic - GHA
Ulica Maršala Tita 200, HR-51410 Opatija



Hotel Admiral - HA
Ulica Maršala Tita 139, HR-51410 Opatija



Grand Hotel Adriatic <-> Hotel Admiral: 200 m

